# XIX

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A study of this collection of ants, comprising seventeen different forms, confirms and extends previous observations on formicids collected in caverns in other parts of the world. Most of the species taken by Dr. Pearse are well-known Neotropical species which regularly nest in forests or open country. Two of them, *Ponera opaciceps* and *P. ergatandria,* are subterranean forms belonging to the ecological association called by Silvestri the "microgenton", and three, *Spelaeomyrmex urichi, Brachymyrmex cavernicola* n. sp. and *Nylanderia pearsei* n. sp., might be regarded as cavernicolous. Since, however, many subterranean, or hypogaeic ants, which do not forage on the surface of the soil, are really cavernicolous, or rather microcavernicolous, it is impossible to draw a hard and fast line between the inhabitants of the two environments. This is shown by *Spelaeomyrmex urichi,* taken by Dr. Pearse on bat feces in the San Bulha Cenote. Although originally described from specimens collected by F. W. Urich in the nests of the guacharo (Steatornis) in a cave in Trinidad, B. W. I., this ant was taken during the summer of 1936 in Cuba by P. J. Darlington in leafmold, and therefore as a member of the microgenton, in the mountains of eastern Cuba.

It is somewhat surprising to find among Dr. Pearse's material a number of specimens of *Acromyrmex echinatior* taken in five different caves and in two of these at distances of 40 and 60 m. from the cave entrance, because this ant is a well-known leaf-cutter and fungus-grower. Since no mention is made of its nesting in the caves, we may assume that the specimens had strayed in while foraging and, having lost their bearings, were wandering about in a most unsuitable environment.

### PONERINAE

*Neoponera latreillei* Forel

Puz Cave, Oxkutzcab, near mouth ☿ ; second cave on San Roque Road, Oxkutzcab, near mouth ☿ ; Cinquo de Mayas Cave, Tekax, near mouth ☿ .

*Neoponera villosa* (F. Smith) subsp. *inversa* F. Smith

Cinquo de Mayas Cave, Tekax, near mouth ☿ .

*Pachycondyla harpax* (Fabr.) subsp. *montezumia* (F. Smith)

Gongora Cave, Oxkutzcab, near mouth under stones and debris ☿ .

*Ponera opaciceps* Mayr

San Isidro Cave, Merida, in debris under mouth ☿ ; San Bulha Cave, Merida, under stones and debris ☿ .

*Ponera ergatandria* Forel

San Bulha Cenote, Motul, on bat feces ☿ .

*Odontomachus haematoda* (Linn.)

Second cave on San Roque Road, Oxkutzcab, near mouth ☿ .

MYRMICINAE

*Solenopsis geminata* (Fabr.)

Puz Cave, Oxkutzcab, near mouth ♀; Gongora Cave, Oxkutzcab, near mouth ☿; San Isidro Cave, Merida, in debris near mouth ☿.

*Spelaeomyrmex urichi* Wheeler

San Bulha Cenote, Motul, on bat feces ☿.

*Pheidole punctatissima* Mayr

Spukil Cave, Calcehtok, on swallow feces near mouth ☿.

*Pheidole punctatissima* Mayr red var.

San Bulha Cenote, Motul, on bat feces ☿♀. Not further identifiable without the soldier.

*Pheidole* sp.

San Bulha Cave, Merida, under stones and debris ☿. Belonging to the *flavens* group but not further identifiable without the soldier.

*Atta cephalotes* Linn var. *opaca* Forel

Muruztun Cave, Tizamin ☿. The specimens are media workers. According to Dr. Pearse's note these leaf-cutting ants were taken in the middle of the cave. They belonged to a mound above, but had come through the root and deposited a great mound of rubbish.

*Acromyrmex octospinosus* (Reich) subsp. *echinatior* Forel

Numerous workers from the following localities: Puz Cave, Oxkutzcab, under stones and debris; Gongora Cave, Oxkutzcab, under stones and debris near mouth; Ziz Cave, inner part 62 m. from mouth where it was 28 m. deep; San Bulha Cave, Merida, under stones and debris; Xkyc Cave, Calcehtok, in debris 37 m. from mouth.

In these series the largest workers measure only 7-8 mm. and are therefore smaller than the largest workers of the typical *echinatior* (7-9 mm.). The carinae on the base of the epinotum are very prominent and the epinotal spines are much longer, more curved and directed more backward than in *echinatior*. The specimens therefore represent a distinct subspecies or variety which will be given a name in a forthcoming revision of the known forms of *A. octospinosus* by the author.[1]

DOLICHODERINAE

*Dolichoderus* (*Monacis*) *bispinosus* (Olivier)

Xconsacab Cave, Tizamin, in inner part 46 m. from mouth ☿.

*Forelius maccooki* Forel

One worker from San Isidro Cave, Merida, in debris under mouth.

FORMICINAE

*Brachymyrmex cavernicola* n. sp.

WORKER.—Length 1.5-2 mm.

Head nearly square, with feebly and evenly convex sides and straight posterior border. Eyes at the middle of the sides, small, moderately convex, with only about 12 facets in their greatest diameter, less than half as long as the distance between their anterior orbits and the anterior corners of the head. Clypeus large, very convex behind but not carinate, its anterior border subangularly produced. Mandibles narrow, with oblique, 5-toothed apical borders, the teeth large and subequal, except the median one, which is minute. Frontal area distinct, triangular, impressed; frontal carinae short, subparallel. Antennae 9-jointed as in the other species of the genus, long and slender; scapes extending fully one-third their length

[1] This revision was published in the appendix of "Mosaics and Other Anomalies Among Ants" (Harvard University Press) shortly after Dr. Wheeler's death. The subspecies was here named *A. octospinosus ekchuah* Wheeler.—A. S. P.

beyond the posterior border of the head; joints 2-7 of funiculus subequal, twice as long as broad, first joint shorter, terminal joint as long as the two preceding joints together. Thorax with distinct promesonotal, mesometanotal and metaëpinotal sutures, distinctly impressed dorsally at the mesometanotal suture, the metaëpinotal oblique on each side and confluent with the mesometanotal suture in the middle; metanotal spiracles not prominent. Seen from above the pronotum is broad and semicircularly rounded anteriorly, more than twice as broad as long without the neck; mesonotum semicircular, also slightly more than twice as broad as long; epinotal declivity sloping, flattened, widening posteriorly, fully three times as long as the slightly convex base. Petiole with low, thick, anteriorly inclined node, which, seen from behind, has a rounded and slightly acuminate superior border. Gaster voluminous, of the usual shape. Legs rather slender.

Shining; very finely and superficially reticulate, the head more distinctly than the body.

Erect hairs very coarse and conspicuous, dark brown, arranged in two parallel longitudinal rows on the front and vertex, shorter on the posterior corners of the head, longer, sparser and paler on the clypeus; pro- and mesonotum each with a few of these brown hairs but there are none on the epinotum; on the dorsum of the gaster they are numerous and regularly arranged. Appendages with rather abundant, fine, white, appressed or subappressed pubescence; gula with similar but more dilute pubescence.

Yellow; appendages slightly paler; dorsum of gaster and posterior portion of head brownish.

MALE.—Length about 1.3 mm.

Head, small, flat, as broad as long, narrower in front than behind, with convex sides and straight posterior border. Eyes large but not convex; ocelli widely separated, large but not prominent. Mandibles small, narrow, with truncated, edentate tips. Clypeus small, flattened, its anterior border produced in the middle as a blunt point. Frontal carinae very short; frontal area like that of the worker but not impressed. Antennae 10-jointed; scapes extending beyond the posterior border of the head; first funicular joint slightly swollen, nearly twice as long as broad; joints 2-8 subequal, nearly one and one-half times as long as broad, terminal joint as long as the three preceding joints together. Thorax elliptical, much broader than the head; mesonotum large, as long as broad, very convex and semicircularly projecting over the pronotum, flattened behind; scutellum large and convex; epinotum small, feebly convex and sloping, in profile without distinct base and declivity. Petiolar node small, its superior border straight and transverse, much sharper than in the worker. Gaster-shaped as in this caste; genitalia small, exserted; stipites subtriangular, with rounded tips; volsellae somewhat uncinate. Legs slender.

Shining, like the worker very finely and obscurely reticulate.

Brown erect hairs very short, present only on the mesonotum and scutellum; remainder of body and appendages invested with very fine, appressed, white pubescence.

Pale yellow; mesonotum brownish, posterior portion of head dark brown. Wings opaque white, with white veins.

Described from 34 workers and a single male taken by Dr. Pearse in the Balaam Canche Cave, Chichen Itza, under a stone near the mouth.

At first sight this species might be mistaken for a *Nylanderia* because of its peculiar erect hairs, or macrochaetae. It is obviously related to *B. longicornis* Forel but its worker is stouter, with much smaller eyes, longer median funicular joints, much thicker petiolar node and very different pilosity.

*Nylanderia pearsei* n. sp.

WORKER.—Length 2.5-2.7 mm.

Head subrectangular, as broad as long without the clypeus and mandibles and as broad in front as behind, with evenly convex sides, rounded posterior corners and slightly sinuate posterior border. Eyes slightly in front of the middle, small, with only 8-9 facets in their greatest diameter. Mandibles very narrow at the base, with oblique 5-toothed apical borders, the second and fourth tooth smaller than the others. Clypeus convex and subcarinate in the middle, depressed laterally, its anterior border projecting, entire, semicircularly rounded. Frontal area very distinct, small, transversely elliptical; frontal carinae subparallel; frontal groove replaced by a short, linear convexity. Antennae long and slender; scapes extending somewhat more than half their length beyond the posterior border of the head; first funicular joint nearly twice as long as the second, which is twice as long as broad, succeeding joints longer. Thorax elongate; pronotum with neck as long as broad, not convex; mesonotum slightly longer than broad, parallel-sided, rounded behind, flattened or even slightly concave, sloping and bounded by impressed sutures; metanotum distinct, with prominent spiracles which are somewhat farther apart than their diameter; mesoëpinotal constriction pronounced; base and declivity of epinotum subequal, the former very convex, the latter flat and sloping; epinotal spiracles projecting. Petiolar scale thick, blunt, strongly inclined forward, its superior border from behind semicircular. Gaster of the usual shape. Legs long and slender.

Shining; sides of head and especially dorsal surface of gaster more opaque, the surface finely reticulate, the gaster more sharply than the remainder of the body.

Pilosity abundant, the stout erect hairs, or macrochaetae pointed, dark brown or blackish, very conspicuous on the dorsal surface, on the legs shorter and white at their tips; scapes with numerous suberect and more delicate white hairs; clypeus, dorsal surface of head and gula with conspicuous long white hairs, which are mingled with the dark macrochaetae on the front. Pubescence white, dilute and conspicuous on the funiculi, gula and sides of head; much finer, denser, more appressed and generally distributed on the remainder of the body and on the legs.

Yellow; appendages scarcely paler; head, clypeus and mandibles slightly reddish; mandibular teeth red.

Described from 12 workers from the Muruztun Cave, Tizamin (type-locality), "from a big midden pile of a leaf-cutter mound above cave"; six workers from the Balaam Canche Cave, Chichen Itza, Temple Pool, 260 m. from mouth and six workers from the Chac Mol Cave, Tohil, under stones at top, not mouth.

This *Nylanderia* belongs to a cavernicolous, microphthalmic group including also two Cuban species, *myops* Mann and *troglodytes* Weber. It is distinctly larger than these species and the eyes, though small compared with those of other species of the genus, are distinctly larger (those of *myops* and *troglodytes* have only 4-5 facets in their greatest diameter) and the conformation of the thorax and petiole is quite different.